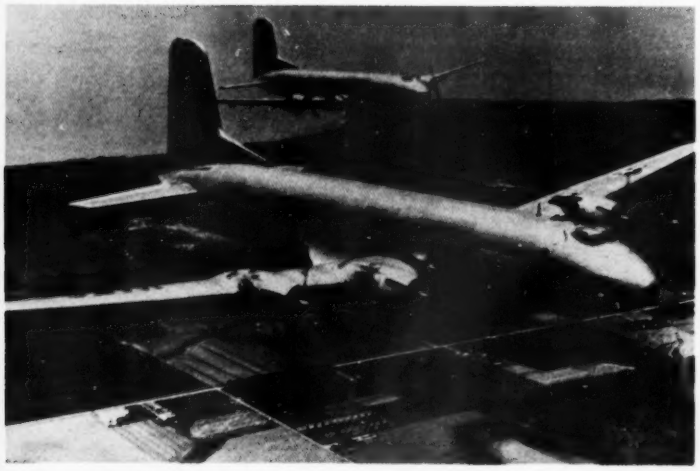
The MAC Flyer

JUNE 1974



20th ANNIVERSARY ISSUE

MILITARY AIRLIFT COMMAND

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The MAC Flyer

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For Greater Efficiency
in MAC Air Operations

JUNE 1974 MAC RP 127-5 VOL XXI, NO. 6

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COVER: Memorable aircraft that have faithfully served MATS and MAC around the globe.

The MAC Flyer is published by the Directorate of Safety, HQ MAC. The contents are informative and not regulatory or directive. All names in accident stories are fictitious and no information concerning aircraft accidents may be construed as incriminating under Article 31, UCMJ.

Contributions, comments, and criticisms are welcome. Write: The Editor, The MAC Flyer, MAC/IGFE, Scott AFB, IL 62225, or call: (618) 256-3534, Autovon 638-3534. The Editor reserves the right to change manuscripts to improve them or correct technical errors.

The magazine is available from: The Superintendent of Documents, Government Printing Office, Washington, DC 20402. Price 50 cents per copy, $5.25 per year ($6.60 foreign).

Distribution F, X; OPR MAC/IGFE.

The MAC Flyer— Coming of Age

by Col Bobby J. Massingill
Director of Safety, Headquarters MAC

Col Bobby J. Massingill, MAC Director of Safety since January 1973, is assuming new duties as Director of Inspections, Office of the MAC Inspector General. His replacement is Col Emery J. Crane, formerly Director of Operations, 436 MAW, Dover AFB, Delaware.

When "The MATS Flyer" first came into existence 20 years ago, the Military Air Transport Service was providing passenger and cargo airlift throughout the world in a relatively stable peacetime enviroment.

The Service had demonstrated its effectiveness as a strategic airlift force in the Berlin Airlift and Korea, but in 1954 was undergoing a change as U. S. military activity ground to a halt. A great part of the MATS mission at that time consisted of transporting military personnel and their dependents to new assignments around the globe. And one of our prime goals was to improve on an already outstanding safety record.

To bolster the MATS safety program, funds were allocated for a flying safety magazine, one that was expected to spread the safety word to fliers in MATS throughout the world. Thus, "The MATS Flyer" was born. Since then, the magazine has become a vital part of our flight safety program.

The acquisition of any new type of aircraft presents unique flight safety problems, and so it has been in MAC as the C-54's, C-124's, C-133's, and H-19's gave way to the more sophisticated aircraft of today's modern fleet. Whenever problems were experienced, they were discussed in detail in "The MATS Flyer" and its titular successor, "The MAC Flyer."

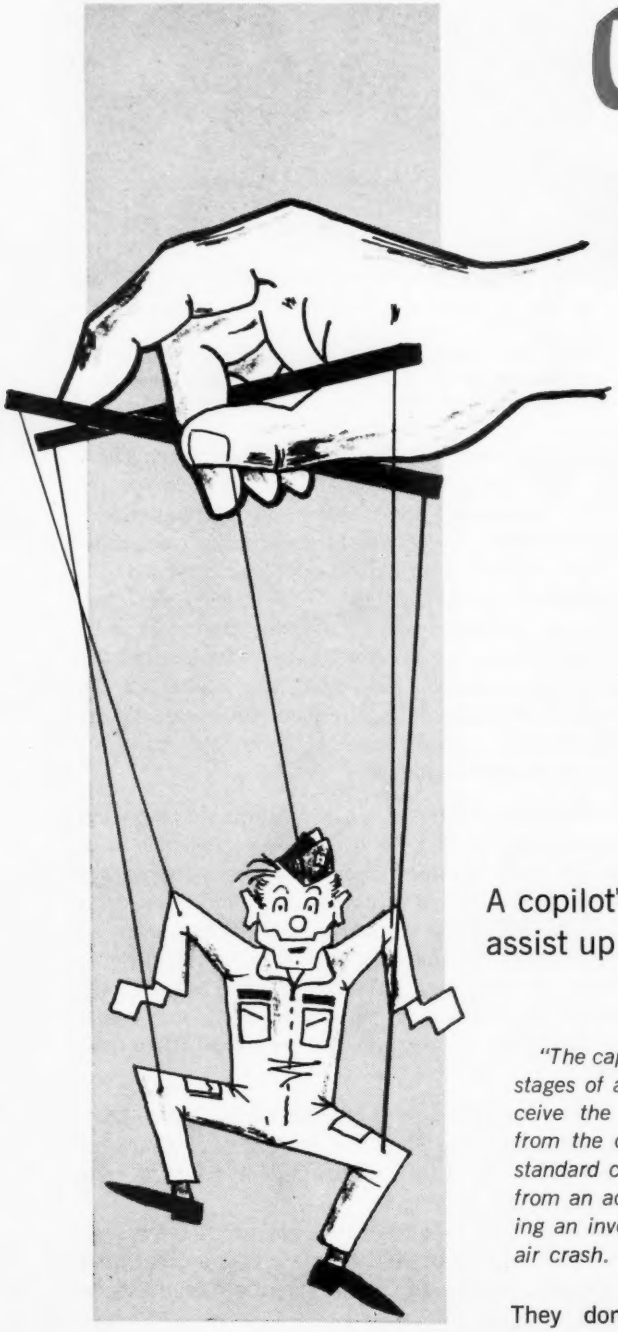
Measuring the effectiveness of such a publication is often difficult, but there is no doubt that effectiveness is there to be measured. We know that the MAC safety record has improved fantastically since 1954, but how can anyone judge whether a magazine article prevented an accident, or perhaps transformed a potential accident into simply a close call?

One measure of effectiveness for any magazine is readership response, and " The MAC Flyer " has received its ample share. The magazine is read by military and civilian aviation experts throughout the world and just last November was presented the Flight Safety Foundation Publications Award for its international contribution to safe air transport operations world-wide.

One reason for the success of our proud magazine is that many of its articles are researched and written by MAC aircrew members. The action guys right on the MAC line contribute their experience and knowledge. The staff writers and editors are also MAC aircrew members, still maintaining flight currency, but who have taken a short break in their primary flight duties to spread the word. This keeps the magazine young and the message sharp and lively.

To many of us in the Command, "The MAC Flyer" has become somewhat like an old friend, always there when we want it, providing a tinge of conscience and a helping hand.

And so, both as a long time reader of the magazine and Director of MAC Safety, I take a great deal of pleasure in kicking off this Twentieth Anniversary issue.



Copilot--or Right Seat Puppet?

By Maj John W. Ray
Supervising Editor

A copilot's job is to monitor the flight as well as to assist up front. But often there are strings attached.

"The captain, during the final stages of approach, did not receive the required assistance from the copilot regarding the standard call outs." — excerpt from an accident report following an investigation into a civil air crash.

They don't get their noses rubbed in it quite as much as navigators, but copilots often serve as the butt-end of jokes implying their presence in the cockpit is more requirement than necessity.

If you are a new copilot, you probably will nod in agreement, while aircraft commanders may validate any tendency to do like-

wise by recalling their days in the right seat.

Jokes are designed to be taken lightly — and should be. But flying the right seat (or left seat in helicopters) is a serious business.

The pioneer aviator who puffed up indignantly at the mere suggestion of taking a second pilot along might have had sound reasons for doing so. But as aircraft and airway systems became more complex, this Lone Eagle rationale became archaic for obvious reasons.

Unfortunately, the subtle copilot put-down hasn't altogether disappeared. Perhaps it is simply a holdover from the old days. But there is a very real possibility that such put-downs, which sometimes seep into the cockpits of our most modern aircraft, have contributed to air crashes in which copilots played major roles.

We've all seen the ready young copilot, eager to assist his aircraft commander any way he can. Yet how many times have you seen (or been) an impatient aircraft commander who completely takes over his copilot's duties in the interest of "saving time." How many aircraft commanders are simply too impatient to wait for an inexperienced right seater to methodically grope through the checklist?

The cockpit put-down is directly related to the unrealistic attitude that a really proficient aircraft commander can perform all cockpit duties better without his copilot's assistance. This kind of thinking can have undesirable offspins, one of which is the copilot who won't touch anything without first hesitating and throwing a glance at the pilot to see if it's okay. In essence, such a copilot tends to transfer his responsibilities to the pilot. He subconsciously gives up trying to perform to his own standards because his aircraft commander discourages him from doing so. Ever try to fly a two-pilot aircraft all by yourself? That's about what happens when your copilot subconsciously sits back and waits for you either to perform his duties or verbally instruct him how to do something in which he should already be proficient.

Then there's another type of copilot, suffering from a strain of the same malady, who feels that the pilot is watching him constantly. Since he knows he's being carefully scrutinized, this copilot expects all of his mistakes to be immediately corrected from the left seat, so he isn't quite as careful as he might be. Unfortunately all copilot errors aren't correctable. For instance, what could happen if a gun-shy copilot hesitates to perform a critical duty during an emergency?

Copilots are vital crew members. They're not just sitting in the right seat waiting to upgrade. But if they aren't consciously aware of this, they may not perform effectively. And if they don't perform effectively, then a crew is someday going to find itself with serious problems.

Most inexperienced copilots start out trying their level best to please the man on their left. There is nothing wrong with this. The copilot should try to please his boss. But what is more important, he must think for himself. He should serve as a thinking entity, not simply as a right seat puppet. If he doesn't think, then he is robbing the entire crew of a great part of the pilot brain power aboard.

Any good aircraft commander monitors his copilot to some extent, particularly if the copilot is new to the system or inexperienced in the aircraft. He monitors all of the crew. But copilots need the opportunity to assume responsibility too, and gain confidence in their ability to serve as the pilot's right hand man. To do this, the right seater must believe that he is an important part of the crew. It is in this development that the aircraft commander plays a major role.

Aircraft commanders don't have a corner on the accident market and, certainly, copilots must perform their duties properly to make each flight safe. After all, copilots alone have precipitated air crashes — ample proof of the critical nature of many of their duties.

Not long ago the pilot of a civilian jet transport, using his own, unauthorized technique, called for his copilot to arm the ground spoilers during a landing roundout. But instead of lifting the spoiler actuating lever, the copilot pulled it aft to the extend position and the spoilers deployed. The pilot noticed the error immediately, but it was one of those uncorrectable mistakes. The aircraft settled back down onto the runway and crashed during a go-around attempt. There were no survivors. An error by the pilot? Of course. A copilot error? Yes. The pilot erred in using an unauthorized technique. The copilot

COPILOT OR RIGHT SEAT PUPPET

not only erred in the manner in which he manipulated the spoiler lever, he also played the role of puppet in performing this unauthorized maneuver. No one will ever know just how many times he had played this identical role without such tragic results.

How many copilots, rather than develop their own proficiency and knowledge, unwittingly play the puppet and accept questionable maneuvers or procedures from the man on their left?

Another example of the importance of right seat thinking was vividly pointed out during a jet transport takeoff. The copilot, instead of activating the gear up lever, activated the spoiler switch. The crash killed sixty-two persons. There can be little doubt that the copilot wasn't taking his routine duties as seriously as he should have.

If you, as a copilot, question the importance of your aeronautical role, then you haven't really stopped to analyze some of your duties. For example, there are few controls on an aircraft more critical than the spoilers. Yet who often manipulates the spoilers near the ground? That's right, the copilot — that many take so lightly. When a put-down copilot, feeling so nonmission essential, touches a spoiler control, it is somewhat like a workman sitting down to rest near a dynamite plunger.

In spite of their good intentions, some aircraft commanders often become impatient with inexperienced copilots. Nevertheless, they rely on copilots to perform well, particularly when the pressure begins to tell. They look to the copilot to monitor what goes on in the left seat and sing out when something doesn't look right. A right seat dummy is even less effective than a right seat puppet.

One company became so concerned about this very problem that it ran a simulator study to check copilot effectiveness. Prior to each simulator flight, the captains were told to disregard certain flight instruments and fly without them. The copilots weren't told this. In more than 20 percent of the flights, the simulator crashed. The copilots either failed to detect that anything was wrong, or hesitated to inform their pilot that his flying was getting dangerous.

Many air crashes could have been prevented simply by an alert copilot speaking up. So if you are a copilot, never sell your job short. In spite of their short fuses, gruff voices, and obnoxious copilot jokes, aircraft commanders depend on you and they're the first to admit it. They are not alone. Schedulers, flight commanders, operations officers, and squadron commanders on frequent occasions depend upon the experienced copilot to aid the new upgrade over the initial hurdles of aircraft command.

When a copilot upgrades to aircraft commander, the left seat will become the most important position in the aircraft. But while you're a copilot, the most important position is the right seat because a copilot's job performance can mean the difference between life and death. And there's no one anywhere who can put down that one fact about a copilot, not even the indomitable C. R. Terror AC type who might put it something like this:

"You're a necessary evil that I must tame, so watch yourself and I'll teach you the game. Wine, women, and song, I'll teach you the lot. So that when it comes to flying, you'll be the best they've got."

Mishap with a Moral

A downwind extension for landing traffic, darkness, and rising terrain help produce a fatal traffic pattern.

Two rescue helicopters deployed to a civil airfield, approximately 150 miles from home station, to provide rescue strip alert during a military exercise. The return trip to home station would be at night and the crew was instructed to complete needed night currency maneuvers.

History of Flight

At 1655 local the big helicopter lifted off from home base. The one hour and forty-minute flight to the forward operating location was routine. For the next hour, the helicopter remained on the ground while the crew maintained cockpit strip alert, with each pilot alternating radio monitor within the aircraft.

On termination of the alert period, the chopper departed for the return night flight at 1945 local. GCI and approach control radar vectored the aircraft en route. On arrival at home base, the pilots flew four practice precision GCA low approaches. Prior to the last approach, the crew advised the radar controller that after completing the radar pattern they would contact tower and begin visual patterns and hoist training.

On the go from the final GCA, the pilot switched to tower frequency and requested clearance for practice hoist work on the parallel taxiway. Tower approved and advised the crew of other traffic in the vicinity — a Boeing 727 on 10-mile final.

Tower controllers observed the helicopter turning left to downwind at what appeared to be the published VFR traffic pattern altitude of 500 feet MSL. As is normal at this airfield, tower lost visual contact with the helicopter on downwind as it passed behind a prominent hill located between the tower and downwind. The chopper reappeared after passing the hill and acknowledged a tower-issued altimeter setting. Shortly thereafter, tower requested the type of landing, and the response from the helicopter was "base, gear check."

Moments later crew and passengers aboard the

ANOTHER SIX FEET

Hills lay ahead in the darkness, and the copter continued on.

civil airliner, now on a two-mile final, observed a fire ball at their 10 o'clock position. The turbine-powered copter struck the top of a 480-foot ridge line just six feet below the crest. Out of control, the helicopter ricocheted off the hilltop and remained airborne for a short distance before crashing inverted in a ravine below. On second impact the helicopter burst into flames and was destroyed. The four crew members were killed.

What Had Gone Wrong?

How could an aircraft in the VFR traffic pattern fly into a hilltop? Investigators reconstructed the final pattern sequence and determined that the helicopter was flown on an expanded traffic pattern, placing the downwind leg approximately two miles from the runway. This distance is 1¼ miles beyond that specified by the base air traffic control directive. The downwind leg was also extended, thus putting the base over a ridge of hills which rose to 500 feet in places.

The absence of moonlight and sparse countryside lighting provided the crew virtually no contrast between the hills and sky. Unaware of the proximity of hazardous obstructions in the blackness ahead, the crew apparently followed normal procedures and initiated a descent to 300 feet as they turned onto base leg. Their flight path did not provide terrain clearance over the hills. Why was the traffic pattern expanded? This will never be known for certain, but here is probably what happened: On initial contact, tower advised the pilot of the Boeing 727 about 10 miles out. Although the airliner and helicopter were making approaches to the runway and parallel taxiway, respectively, lateral separation between the two aircraft on final could be reduced to as little as 600 feet if both were on final at the same time. That's not much clearance, especially at night, when being overtaken by an airliner. So the chopper pilots might have voluntarily expanded the pattern to allow spacing with the 727, permitting the crew ample time to accomplish hoist recovery checklists in preparation for hoist practice maneuvers on the taxiway.

What about those hills just two miles from the airfield? Certainly the crew knew about them. Several factors may have influenced the crew, giving them a false sense of security. They had just completed four GCA patterns over the same area. These approaches were flown at a higher, safe altitude. However, the base air traffic control regulation which established the helicopter VFR pattern attitude at 500 feet also created a lid on VFR helicopter

operations by restricting exit routes to 500 feet or below within five miles of the airfield. But the hills were not visible and the crew was busy preparing for a hoist pick-up. Add a bit of distraction or preoccupation caused by the airlifter and it's not difficult to see how the crew could have been suckered in.

Moral

Surely, this crew didn't realize that they had done anything wrong or hazardous. They just extended the traffic pattern, which for a chopper jock is a common practice, since fixed-wing aircraft usually get priority. But in this instance that pattern adjustment placed the helicopter in a hazardous environment outside the confines of the published traffic pattern.

What can be done when the envelope of operation becomes so limiting that it jeopardizes safety? First of all, helicopters are not afforded the same terrain margin safety in traffic patterns as their big brothers. How many fixed-wing traffic patterns provide only 200-300 feet obstruction clearance? Fixed wing aircraft aren't restricted to an altitude of 500 feet AGL or below in an area where hills rise to over 700 feet. Helicopters can fly slower and are more maneuverable and are required to fly low at times to perform their missions. This type of flying often keeps them fairly close to the weeds, wires, and hills.

Take a good look at your operating conditions and if they don't provide adequate safe space or allow some flexibility it's time for some changes. Too often, unique missions like helicopter and air drop units accept less than ideal conditions, the result of which is hazardous takeoff and landing routes and marginal traffic patterns. But that doesn't mean routes or altitudes can't be changed.

Step back and see if you have any box canyons in your operation. Allow for those contingencies such as emergency procedures, DZ's in mountainous areas, hoist or sling work, and night maneuvers.

If you're not happy with the terrain or obstacle clearance, entry or exit and pattern routes, or clearance provided between other aircraft, now is the time to get it corrected, before an accident or near miss gets your and everyone else's attention.

Simply stated, it's better for all concerned if you get attention with a valid complaint rather than with a burning hole.

Traffic pattern ended here.

MAJOR FISCHER and CREW

GOOD SHOW

Left to right (kneeling): TSgt Frank H. Doglione, flight engineer, 702 MAS; Capt Bruce B. Dobbs, pilot, 702 MAS; MSgt William Wytish, flight engineer, 732 MAS; Major Robert H. Fischer, aircraft commander; (standing): MSgt Rodney L. Harne, flight engineer, 702 MAS; Capt Robert W. Klessel, navigator, 335 MAS; Capt John P. Jursnick, pilot, 732 MAS; and Capt Donald Loughran, pilot, 702 MAS.

Weather on the night of 12 March 1974 was clear and the local training mission was progressing smoothly in the traffic pattern at McGuire AFB.

The C-141, being flown by an all reserve crew, was commanded by Major Robert H. Fischer, an Air Reserve technician and flight examiner. Maj Fischer was in the left seat instructing Captain Donald Loughran who was requalifying as aircraft commander. A third pilot, Captain Bruce Dobbs, a former flight examiner, also requalifying as aircraft commander, was in the jump seat.

Two touch-and-go landings had gone well and the Starlifter was coming back around for a third. After passing over the threshold, the plane touched down smoothly. Capt Loughran was monitoring airspeed and preparing for takeoff when the aircraft suddenly lunged skyward.

Both pilots pushed on the control column but the nose of the aircraft shot up to an angle of 35 degrees. Unable to control pitch attitude, the pilots disconnected the electro-hydraulic pitch trim and rolled the staggering plane into a momentary 90 degree bank, trying to get its nose down to maintain flying airspeed.

Major Fischer, realizing that his aircraft might crash, turned it away from the housing area. Keeping the nose down to prevent a stall required from 60 to 90 degrees of bank.

As the two pilots struggled for control, the plane spiraled skyward, airspeed varying between 100 and 150 knots. Capt Dobbs, watching anxiously from the jump seat, noticed the trim indicator and determined the trim had run away. He directed the flight engineer to depressurize the number two hydraulic system which would remove pressure from the pitch trim motor. Maj Fischer and Capt Loughran were still struggling for control when Capt Dobbs reset the electrical pitch trim and began running it down. By now, five crew members were in the cockpit pushing forward on the yokes. The electrical trim finally edged downward and the two pilots slowly began to regain control.

After spiraling upward to 7,300 feet, the Starlifter was finally brought under control. Maj Fischer elected to leave the number two hydraulic system depressurized and subsequently made an uneventful landing using the electrical pitch trim.

Flight recorder data indicated that approximately two minutes elapsed from the time the malfunction occurred until the crew regained control of the aircraft.

Gen Paul K. Carlton, MAC Commander, in a congratulatory message to the crew, called their action a demonstration of "the highest degree of coordinated airmanship."

The skillful coordination and successful handling of this critical emergency merit the most lofty recognition. To COMAC's praise, we at "The MAC Flyer" add our "Good Show."

At about 900 feet altitude and 2 DME, Fastback 02 suddenly broke out of the overcast. Major Jerry Porter, the T-39's pilot, glanced at the High Tacan approach plate and confirmed the MDA for the circling approach as 600 feet. As he rolled the T-39 into a 30-degree left bank toward downwind, he stared out the window and thought: ceiling's pretty ragged but we're going to make it down.

Rolling out on downwind, he glanced over his right shoulder at the runway and pushed both throttles forward to get his airspeed back near 175.

"Kinda bumpy down here isn't it, Bob?" he said to his copilot. "Keep your eyes on the runway. It's hard to see from over here. Vis is pretty bad."

Bob Nelson, the T-39's copilot, had over 3,700 hours in jets. During his tour in SEA he'd flown the F-105 and had released a few 750's during the early Hanoi and Haiphong strikes. He was a very capable pilot who knew he could handle just about any flying situation. His experience in 86's, 100's, and 105's and the tour in Air Training Command had exposed him to nearly every conceivable flying situation.

Before being assigned to Headquarters 13th Air Force, Jerry, the aircraft commander, had spent most of his time in SAC. He had about 1,400 hours as a B-47 aircraft commander and almost as much time in B-52D and G models. After his tour with MACTHAI and 7th Air Force, he welcomed the opportunity to fly T-39's out of Clark in the Philippines. Normally, it was like driving an air taxi service on Sunday, but today was a bit different.

I'll keep the airspeed up until we near base, Jerry thought. Looks like heavy rain close to the final turn. Have to keep it in tight.

"Bob, speed brakes and gear coming down . . . Tower, Fastback 02. Have the field in sight. We're abeam midfield for right base, runway 25. Are we cleared to land?"

"Fastback 02. Cubi Tower. In sight. Report gear down and locked. Wind variable 220 at 18, gusts to 30 knots, and there's heavy rain to the north of the field. Suggest you keep your base in tight. Cleared to land."

Going Missed Approach

by Maj Brad Tilford

Basically a visual maneuver, a circling approach can cause insurmountable problems unless you're all set with an escape route.

GOING MISSED APPROACH

"Three down and locked, Jerry," Bob interjected. "Flaps."

"They're coming," replied Jerry. "We'll keep the airspeed around 170 during the turn, pretty gusty. On final we'll slow it down."

"Rog."

Abeam the approach end of runway 25, Jerry strained to watch the runway as it disappeared behind Bob's window. "I'm going to keep the turn in tight, Bob. Don't want to get into that rain. Double check the gear for me."

As the T-39 rolled into the final turn, Jerry watched the airspeed bouncing near 170. Even though he tried, the poor weather kept him from seeing the runway but he managed to catch glimpses of land through the haze at about the 2 o'clock position. He felt sure the runway would reappear any second. All he'd have to do was turn a few more degrees.

"Still got the runway, Bob?"

"Barely, vis is really bad."

Jerry glanced through the windscreen in time to see the wall of water envelop the Sabreliner's nose. Then the world disappeared into a deep gray murk and heavy rain thundered on the aircraft's skin. Jerry quickly glanced at the attitude indicator, then at the altimeter. Five hundred feet! The 600-foot circling minimums for the approach flashed through his mind. Disgusted and concerned, he pulled back on the control column and watched the miniature aircraft move above the horizon bar. Instinctively, he added a nudge of power, then noticed that airspeed had dropped to 155. He added more power.

"Bob, can you see the field?" Jerry asked apprehensively.

"No. Can't see anything in this rain. You're descending! Pull it up! But keep her turning, I'll look for the runway; you fly the plane. Minimums are 600 feet."

"Okay. Cubi's got plenty of runway, but it's probably wet. We'll need it all."

"Yeah!" Bob commented.

As he quickly surveyed the attitude indicator, altimeter and airspeed indicators, Jerry began to doubt that they'd really be able to make it to the runway. Leveling again at 600 feet, he instinctively glanced out the windscreen, hoping somehow the rain would suddenly stop.

"Wonder what it's like at Manila?" Bob interjected.

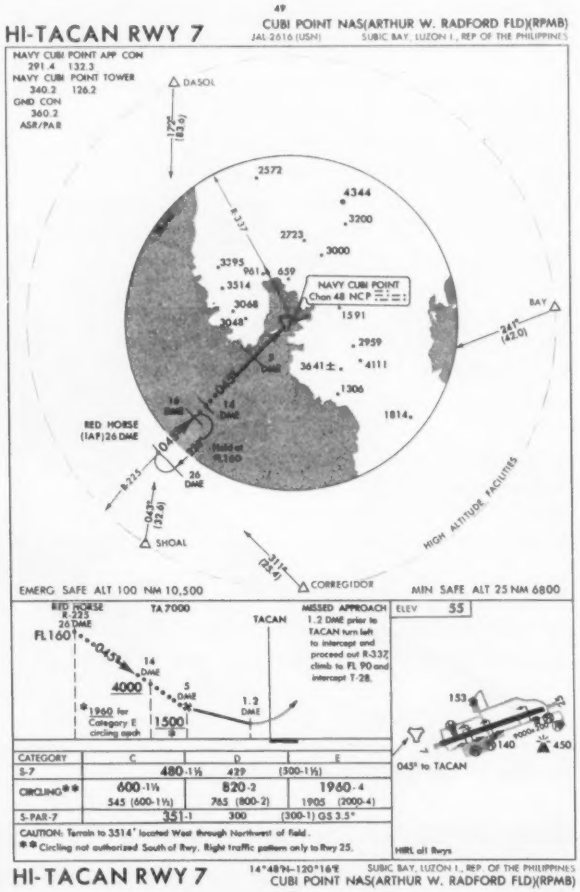
"Dunno, but it's beginning to look like we might have to find out. Winds seem pretty strong to land in even if we do break out."

"Yeah," Bob blurted. "All we need now is a wet runway and some bad gusts. We'll be off into Subic Bay."

As the heading indicator passed 150 degrees, Jerry quickly asked, "Got the runway, Bob? I can't see anything."

"No, just lotsa rain!"

Pushing both throttles against their stops, Jerry pressed the mike button, "Tower, 02's missed approach. We've lost sight of the field." As he talked



Flight path into the mountains north of Cubi Point

he glanced anxiously back to the right in a vain attempt to catch a glimpse of the airfield, but heavy rain continued to totally obscure his outside vision.

As the tachometers steadied at 100 percent and the T-39's nose came up, Jerry rolled the wings level, then, uneasily into a left bank. "What was that missed approach course, Bob?" he asked curtly. "It's northwest isn't it?"

Bouncing against his seat belt as turbulence tossed the T-39, Bob studied the approach plate for a moment. "Yeah. Turn to about 300 degrees. I'll set the course in the Tacan. It's 337 degrees outbound to 9,000 to T-28."

"You sure? That's right through the Bataan mountains isn't it?" Jerry asked tersely.

"That's what it says, 337 degrees off of Channel 48 to 9,000," Bob replied firmly.

Jerry rolled the aircraft into slightly over 35 degrees of left bank then back to 30. Apprehensively, he glanced at the CDI and saw the heading pointer turning counterclockwise toward the top of the case. It seemed to be barely moving as it passed the right wingtip position. Gripping the control column tightly with both hands to counter the jarring turbulence, he'd wished he'd studied the approach plate a little closer before starting down the chute on the penetration. Prior to and during the approach, he hadn't given much thought to the missed approach. He knew what he'd do if he arrived at the missed approach point and hadn't gotten visual contact with the runway. I'll fly the published missed approach — with Bob's help. Depending on what the weather's like, we'll either try Clark, Manila International, or hold and try Cubi Point again. It hadn't even dawned on him that he'd be able to see the runway at the published missed approach point and then not be able to complete a circling approach and landing.

Now, there he was, passing 900 feet in a 30-degree bank turn, climbing through the same thunderstorm that had caused him to go missed approach. And mountains all around. Jerry looked worried and strained as he held the T-39 in its climb.

Bob Nelson frowned as he opened the enroute chart and tried to locate T-28. Turbulence made reading difficult. Apprehensively, he glanced out the window into the driving rain, then toward the CDI. The heading pointer was swinging through the parallel toward an intercept, but the course indicator was still braced against the left side of the instrument case. Bob looked back toward the approach plate and thought: the missed approach radial is 337 to T-28. Scanning the plate for more information he read: "Caution. Terrain to 3,514 west through northwest of field." Stunned, his eyes shot to the altimeter — it was sluggishly passing 2,800 feet. Then they framed the RMI — the tacan bearing pointer pointed steadily at 200 degrees; aircraft heading was 300!

"Jerry, turn left now!" Bob yelled. "Turn left. We're flying right into the mountains!"

As Jerry rolled the T-39 into 45 degrees of bank, he looked anxiously at Bob, then back at the altitude indicator and pulled the aircraft's nose up. "We're what? How high are they? Where are they?"

"Keep climbing and turn for the Tacan! Put it on the nose!" Bob said frantically. "We were northeast of the field when we went missed approach. We should have continued the right turn toward the field until we intercepted the 337 radial. But, we turned left, we turned left!"

In grim silence, Jerry rapidly studied the aircraft's instruments and fearfully glanced out the window. Circling approaches. If I'd just remembered. He's right. Turn toward the runway when you've lost sight of it, not away! In stark terror, he saw fuzzy green tree tops and craggy boulders filling the windscreen. If I'd only turned toward the runway . . . !

Fastback 02 flashed brilliantly as it exploded against the Bataan mountains. And then the tumultuous rain quickly absorbed the fire, and Fastback 02 was once again engulfed in the murky gray that had forced its crew into their missed approach.

The crew of Fastback 02 never existed; this accident never occurred; and, just like this accident, was fictionalized. Fictionalized, not to make a point, but to drive home some little-understood and seldom-thought about points which can help you avoid those difficult-to-see obstacles that might be in your way the next time you circle to land from an instrument approach.

— THE PROFESSIONAL

CAM is alive and well but now a compact operation capable of rapid expansion.

Whatever Happened to CAM?

by Maj Joseph B. Burris
MAC/DOXT

There was a time when all MAC aircrews were intimately familiar with Combat Airlift Training because sooner or later each pilot, navigator, and loadmaster was required to check out in it.

The name of the game later became Combat Airlift Mission (CAM), but the mission remained the same — to provide strategic airdrop and airland capability for the Department of Defense. Even with the huge workload during the conflict in Southeast Asia, MAC crews maintained currency in CAM. But whatever became of CAM?

With the 1970's came a change. Instead of crews in all units qualifying in CAM, now only two wings have the mission — the 63d MAW, Norton AFB, Calif. and 437th MAW, Charleston AFB S.C.

The C-141 made strategic airdrop an Army field Commander's dream. Starlifters could unload paratroopers and heavy equipment in the states and, with minimum refueling, fly the loads to most parts of the world for immediate drops. Operation Focus Retina in 1970 demonstrated this concept when loads departed the CONUS for a mass drop in Korea. But the dollar squeeze in this decade has altered CAM. The men and machines remain ready and capable of being trained, but there aren't enough bucks in the CAM purse to keep all crews active in it. So the complexion of the airdrop function in MAC has taken on a new look.

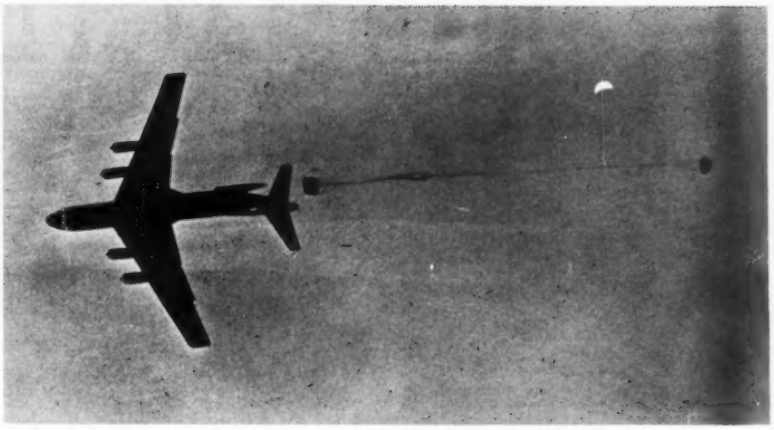
The concept for the MAC airdrop force calls for a smaller, highly qualified cadre, capable of rapid expansion when needed. This method provides a viable strategic aerial delivery at lower training costs. The force is both

a "ready response force" and an "expansion force."

The "ready response force" performs the routine aerial delivery training missions and is available to support contingency airdrop requirements. Aircrews of this force are provided by the active duty and associate reserve wings at Norton AFB and Charleston AFB. All crews (and squadron and wing commanders) maintain currency. Included in this capability are combat control teams and aerial delivery sections.

The "expansion force" is provided by the remaining C-141 airlift wings, and the instructors at the aerial delivery training course at Altus AFB. The active duty airlift wings at McChord AFB, Wash., McGuire AFB, N.J., and Travis AFB, Calif., each have two standardization aircrews current in CAM, and a cadre of eight aerial delivery specialists remain current to train other crews if expansion is necessary.

Initial CAM qualification training for all aircraft commanders, navigators, and loadmasters, is being undertaken at Altus AFB, Okla. The curriculum is complete, instructors are ready, routes and drop zones are established, and the combat control team and aerial delivery sections are on station. This centralized qualification course will standardize training.



A heavy equipment bundle beginning its nylon penetration.

What's in the future for CAM? Under development is a method to provide precise electronic formation positioning. Station Keeping Equipment (SKE) will allow safer formation flights in weather by providing accurate radar presentation for crews. This electronic measure, coupled with an electronic drop zone marker, will allow a formation of C-141's in the clouds to locate drop zones and make airdrops without descending into clear skies.

Tactics presently used by MAC meet the needs of the airborne forces — with safety and flexibility. For example, large Army units can be dropped on a battlefield by large formations, or a single ship can drop small loads on pinpoint targets. New tactics resulting from new equipment will make CAM even more flexible.

While economic constraints have caused MAC to reduce the number of CAM-current aircrews and support personnel, many members still perform routine unilateral and joint airborne training. If called upon by the military planners, MAC will provide a mobile, strategic airdrop force to meet the contingencies.

CAM can rapidly expand to meet contingency operations.

ABOUT THE AUTHOR

Maj Burris graduated from pilot training in 1967 and before that was a navigator for more than six years. He piloted C-141's and C-130's (SEA) and has accumulated more than 7,000 hours of flying time. He is presently a combat tactics and techniques officer at Headquarters MAC.

THE MAC FLYER Completes a 20-Year Hitch

The MATS Flyer is Born

The first issue of the "MATS Flyer" was published in June 1954. One article described two new MATS aircraft, the C-118 and C-131A. Another introduced a funny aviator, C. R. Terror.

A New Era

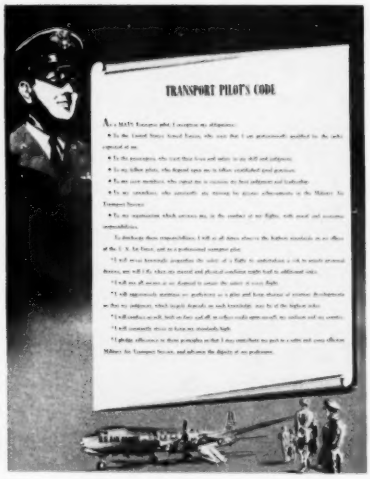
An artist's concept of a future jet transport on the cover of the November 1955 issue.

The Weenie Wagon

"The C-133's, kings of the cargo carriers, are on the way," promised the May 1958 magazine. An article gave tips on what to expect from the big birds.

Old Shakey in Alaska

"Operation Shoehorn," an Alaska resupply effort flown by C-124's, was featured in October 1958. The operation featured such unforgettable landing fields as Tatalina, Granite Mountain, Sparravohn, and Utopia Creek.



"Transport Pilot's Code"

This composite, in the September 1960 issue, became a familiar scene for MAC crews in the 1960's.

The Starlifter

The January 1962 issue told of the development of the C-141A. The magazine updated the story in subsequent issues.

It was 20 years ago this month that the first issue of "The MATS Flyer," rolled off the press and found its way to MATS aircrews throughout the world.

The magazine was originally published by the MATS Office of Information Services as a bi-monthly, but by its third issue had been taken over by the MATS Office of Flying Safety as a monthly.

From the outset, its pages featured accounts of airborne experiences with either stated or implied lessons from which other crew members could benefit. The magazine never screamed "Safety," but attempted to present its articles in a manner that kept aircrew members reading and absorbing for themselves the safety message.

That was its purpose and remains so 20 years later — to involve its readers, a concept which, when successful, assures that the safety message reaches its target.

Although the style and format of today's "The MAC Flyer" remains similar to "The MATS Flyer" of 20 years ago, there have been a great many changes. But two features have endured, virtually intact — "C. R. Terror" and the "Good Show" features. Terror has grown somewhat older and gained one rank, but he still suffers from the same shortcomings endowed upon him by his creator, Maj. William C. Anderson of Headquarters Air Weather Service (now a retired colonel).

We of the 1974 staff are sure our readers join with us in saying "Good Show" to the dozens of former staffers who over the last 20 years have flavored the MAC safety message with ingredients which provide entertainment as well as enlightenment.

A New Chopper

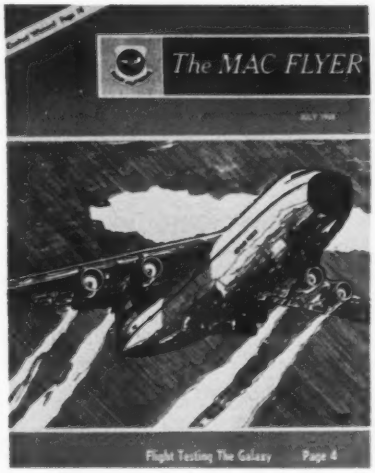
The advent of the most advanced piece of rescue hardware known, the CH-3C, was just around the corner and the magazine gave its readers a peek in the April 1963 issue.

Anchors Away

"Anchors Away!" After nineteen years as a part of MAC, all units of the U.S. Navy assigned to MAC were withdrawn. The June 1967 issue told the story.

Flight Testing the C-5

The July 1968 issue told how flight test crew members and engineers were preparing for the C-5 flight test program.



Integral Crews

So far in 1974, the most significant event has been the integral crew concept, explained by Gen Paul K. Carlton in the February issue.

Tell a guy who's comfy and cozy with a sweet thing that he's the only one available to fly and watch him come unglued.

Emotional Dilemma

by Lt Col Donald B. Wakefield
443 MAW, Altus AFB

Heat produced by emotional pressure expands to fill the mind, remaining as a blockage to clear thinking until relieved.

If you are wondering just what I'm talking about, you probably should read the rest of this bit of nostalgia. On the other hand, if you have already extracted the safety connotation from the opening paragraph, it seems to me that it is a waste of valuable time to read on — in either case, I will continue.

My friend, good ole Moe, had long eluded the sublimities of holy matrimony. He had acquired a genuine Matt Helm bachelor pad complete with waterbed and hot and cold running pajama tops. As in all good stories, it was a dark and stormy night and ole Moe had a thing going with a sweet little number he'd met the night before at the officers' club lounge.

The jingle of the telephone, which Moe had forgotten to remove from its cradle, was almost drowned out by the hum of the blender shredding through the frozen daiquiris. Unwinding himself from the arms of the voluptuous beauty, Moe reached unwillingly toward the telephone. As could be expected, it seemed that two of Moe's squadron buddies had weasled their way out of flying duty, leaving the squadron scheduler with no recourse but to call good ole Moe.

"You're the only one available," implored the scheduler.

Reluctantly, Moe turned off the blender, mumbled undistinguishable noises as he changed into his best nomex, bade a near tearful farewell to his evening's entertainment, and rode off in his sports car.

The route to the flight line brought Moe within eyeball distance of the officers' club where, to his astonishment, he spotted his two "DNIF" friends and their wives alighting from their cars and about to partake in the fun and gaiety inside. Ole Moe was fit to be tied. His uppers ground against his lowers, resulting in a shift in his center of gravity. This gravity shift caused his right foot to press heavily against the car's accelerator. As he stopped his car at base operations, a flashing red light on the Security Police vehicle interrupted Moe's gloomy thoughts.

Speeding ticket in hand, he stormed out of the car, darkness masking the green tint of rage that otherwise would have been obvious. Inside ops, Moe was greeted by the illuminated face of his co-pilot, Billy Brownbar.

It's almost as if he knows something, thought Moe.

At this point the field went below takeoff minimums. The Command Post, in its usual helpful manner, put out the word. "Stick with it till the weather lifts."

Why hadn't the dumb scheduler checked the weather? Maybe he knew all along what ole Moe was up to and wanted to catch him before he had a chance to quench his passion with daiquiris. Or maybe the scheduler found out that it was Moe who had short-sheeted his bed at survival school.

The flight line snack bar was closed for cleaning and the roach coach had broken down, leaving nothing to do but wait. "We'll wait in the aircraft," mumbled Moe as he dialed crew transport.

"I'm sorry sir, all our vehicles are tied up with the I.G. There will be a delay." Moe managed to hang up the phone without breaking the instrument.

"This is all a squadron plot," he shouted. "I'll give that duty scheduler a piece of my mind."

Mrs. Duty Scheduler answered the phone.

"Where in hell is Duty?" screamed Moe into the phone.

"Why he's in bed," she answered sweetly. "I hate to wake him; he worked so hard in the scheduling office today."

The steam coming out of Moe's ears was easily noticeable as he approached the aircraft. Moe was too mad to fly, so under the pretense that Brownbar needed the experience, he climbed into the right seat. Moe found the scroll checklist in a state of disrepair. Somewhat more than just concerned, Moe began to wait out the weather.

"The field is now open," came the unidentified voice from the tower.

"Clearance is available — call when ready to taxi."

"Let's get it over with," grumbled Moe. It seemed to Moe that Brownbar deliberately delayed the engine start routine. "Let's go, fella. The later we get started the later we get back. I've got places to go, people to see, and things to do."

Billy moved a little faster.

"Clear on the left," Brownbar stated as Moe flicked the taxi light switch to alert the marshaller.

"What does that marshaller think he's doing," interrupted Moe.

The aircraft lurched forward as Billy Brownbar applied power and released the brakes. Number four engine struck an external power cart. The marshaller waved frantically. Humbly, Moe called the fire department. "I wonder if there is an opening in the Air National Guard," he mumbled.

Channel 11 came alive with the voice of the Command Post duty controller.

"MAC 54321, the DO just cancelled your mission due to destination weather. How copy, over?"

"Do I copy? Cancelled! Why didn't you do that five minutes ago?" bellowed Moe into the microphone.

"Gee Moe, you sound miffed," came the controller's answer. "Sure is a good thing you didn't have to fly in that state of mind."

ABOUT THE AUTHOR

Lt Col Donald B. Wakefield, a graduate of Baylor University, entered the Air Force in March 1957. Since then he has accrued over 7,000 hours in fighter, bomber and transport aircraft. Lt Col Wakefield is currently the Chief of Flying Safety for the 443d Military Airlift Wing, Altus AFB, Oklahoma.

The Best "Flyer" Analyzers 1966-1974

"Velly nice landing, fly-boy. You only make one mistake . . ."

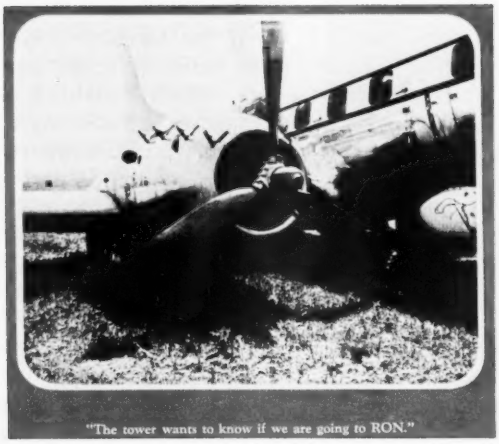
"Sorry, buddy, but when you go Space Available you can't be too choosy!"

"I have to go to the bathroom."

"You're too late!"

"Gesundheit!"

"Whew! For a minute there I thought you were going to hit the pole."



"The tower wants to know if we are going to RON."

"You're still touching down a bit nose wheel first, Kleinschmidt!"

A new squadron out West rides shotgun for the nation's missile force.

A New Kind of Rescue Squadron

by Lt Bob Raines
37 ARRS, F. E. Warren AFB

A mission quite unlike that of any other MAC flying unit is being pursued by a group of Aerospace Rescue and Recovery Service personnel out West, many of whom are fresh out of the Strategic Air Command.

If this sounds to you like a joint-command effort, that's close to what it's all about in the 37th ARRS, headquartered at F.E. Warren AFB, Wyoming.

Many of the 370 personnel in this squadron, whose ten detachments are scattered throughout the west, are former members of the Strategic Air Command which operated the missile support mission until last December.

That's when MAC (and the Aerospace Rescue and Recovery Service) took over the mission and reactivated the highly decorated 37th to provide helicopter support for the 1,054 SAC missile sites.

There are a number of reasons why the mission was switched from SAC to MAC, none of which is of great concern to the aircrews flying the squadron's 50 UH-IF Huey helicopters. But one of the more unusal features of the changeover is that many MAC and SAC helicopter crewmen are now working together as part of MAC. There used to be an old joke as former SAC crews received assignments to MAC that MAC was becoming "Sacumsized." But the 37th is a good example of how part of SAC has now become officially "Macumsized."

Armed with their helicopters and a yen for getting the most

out of their mission, the 370 personnel of the 37th busy themselves flying to and from missile sites — many of which are located in remote areas — resupplying and providing airborne security for weapons convoys. A weapons convoy is often on the road for many hours enroute to a missile site, so the helicopter escort missions can be long and fatiguing. But it's all part of the job and the chopper jocks rack up more flying hours than those in many conventional ARRS detachments.

The rugged terrain out West makes the helicopter a real time saver in logistical support. When a missile site needs a vital part for one of its components, ground transportation simply takes too long. So a Huey is called into action and arrives at the site in short order.

Another part of the mission is the low level survey. This means checking electrical communications and control power cables between launch control facilities and sites, and reporting damage to maintenance personnel who usually are on the way to the area in another helicopter within minutes. This kind of mission provides a diversion from the more routine type of flying.

A helicopter stays cocked, and aircrew and security police on alert at each base are ready to launch at a moment's notice should difficulties arise at any of the sites. But then there's nothing new in that for either former SAC fliers or the long time ARRS crews.

With this potpourri of non-rescue missions, anyone not entirely familiar with the mission might be tempted to think that these crews are simply in the "you call, we haul" and surveillance business. Not so, because rounding out the 37th mission, in true ARRS fashion, is the old familiar search and rescue and medical evacuation commitment. With its ten detachments scattered over a wide area — F.E. Warren AFB, Wy; Davis Monthan AFB, Ariz; Ellsworth AFB, S.D.; Grand Forks AFB, N.D.; Vandenburg AFB, Calif; Little Rock AFB, Ark; Malstrom AFB, Mont; McConnell AFB, Kan; Minot AFB, N.D.; and Whiteman AFB, Mo — the 37th aircrews are ideally situated to conduct such missions. During one recent three month period, crews flew 14 special missions and were credited with two saves.

So in spite of their mission support role, the 37th does retain the rescue flavor that it is known for. And with some 1,054 SAC missile sites to support, there's a great deal more for the crews to do than to gaze at the wide open sky and listen to the lonesome sound of the wind across the plains.

ABOUT THE AUTHOR

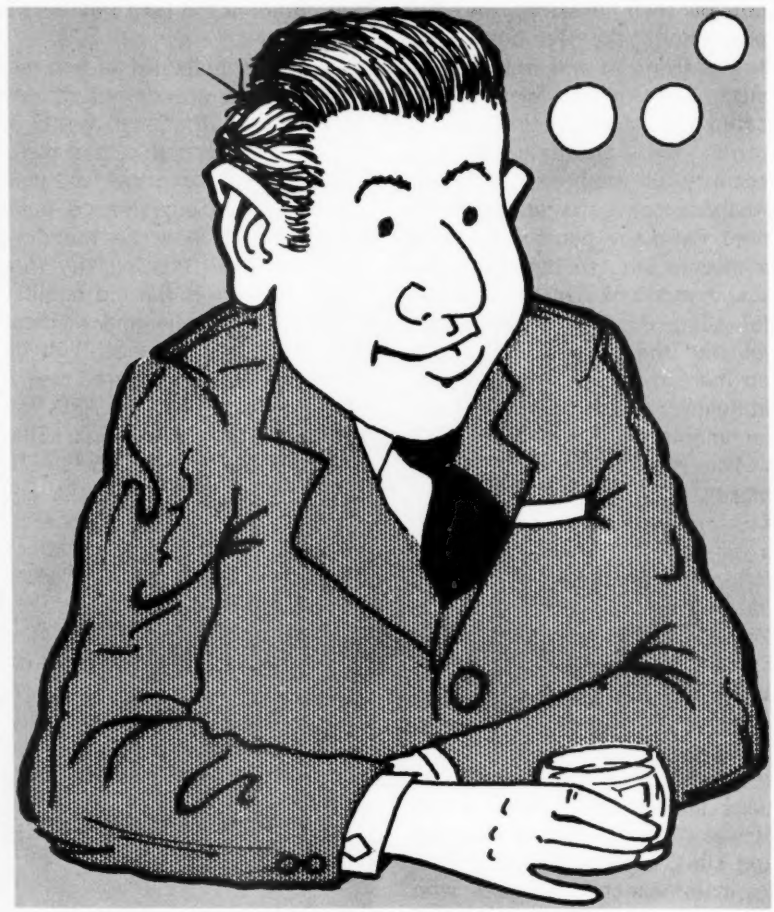
Lieutenant Robert Raines, a 1972 graduate of the U.S. Air Force Academy, graduated from UHT in 1973 and upgraded to aircraft commander in the UH-1F in October 1973. He is currently stationed at F.E. Warren AFB with the 37 ARRS.

A 37th ARRS "Huey" crew circling over a missile convoy departing for a remote site.

Our Paunchus Pilot celebrates his 20th year this month. His creator tells why and how C.R. was conceived.

AN ODE TO C.R. TERROR

by William C. Anderson
Col, USAF (Ret)



ABOUT THE AUTHOR

Since retiring from the Air Force, Mr. Anderson has published several novels, numerous magazine articles and penned screenplays for motion pictures and television. One of his novels, "Hurricane Hunters" has recently been made into a motion picture and will appear on television this fall. His literary success notwithstanding, Mr. Anderson still considers his first creation, C.R. Terror, perhaps his most enduring one. In spite of his hectic schedule (he was involved in filming "Hurricane Hunters" until early April) Mr. Anderson found time to pen this special story for "THE MAC FLYER." Ed.

It doesn't seem like two decades have passed since Major C.R. Terror was born. Actually, it wasn't as much a birth, as it was a form of exorcism, which took place one balmy evening during an unusually heady two-fer night at the Andrews AFB Officer's Club. Dammed by vermouth and sired by Beefeaters (the former only a fleeting acquaintance), our brainchild came into the world kicking and squawling.

If memory serves, and it does, it was a difficult birth. The labor pains were agonizing.

It had been no short gestation period back in 1954 before the "MATS Flyer" itself was born. Money was tight in those days (so what else is new?) and getting a new magazine authorized by the

Government Printing Office during a military retrenchment period (there had been some kind of a flap in Korea) entailed many man-hours of presentations, justifications, wheedling, and entreaties just short of blackmail. And we'd have tried blackmail if we'd had anything on anybody.

Our first dummy issue didn't exactly contain a lot of yuks. By comparison, the Haiphong yellow pages was a gas. It was obvious something had to be done to liven it up. That was when we conceived the idea of a bulbous, bibulous, bandy-legged pilot who exemplified all the bad habits a crewmember could possibly be guilty of. And, it was a bit daring then, we'd top off this character by making him no stranger to squeezings of the grape, nor to bosomy broads who liked to breast the waves — and vice-versa.

Now for a name. We came up with quite a few contenders, before being smitten by the divine afflatus. In 1954 a program was in effect called Combat Readiness Training. It was designed to keep our rated jocks and paper shufflers combat-ready in case of an emergency. It was launched with a built-in headwind, as flying a hundred hours a year did not exactly put a Rickenbacker hone on a poor slob who was up to his dewlaps in carbon copies at a desk job every day.

So, since the flying safety aspects of CRT were being heavily emphasized, why not use the initials for our hero? Thus, Major C.R. Terror was born. What a stroke of pure genius! We threw the first column of our midwifed mustang into the second issue. Now the ole "MATS Flyer" really sang! It had the pulse-pounding excitement of a xerox copy of AFR 60-16.

The first few issues burst upon the publishing world with a bugle blare of ennui, and a cymbal crash of apathy. As any publisher will tell you (including Hugh Hefner), it takes a few issues for a new publication to take hold. It was before the day of the staple in the navel, but had it not been it's doubtful if even a center fold-out of a C-97 would leave too many readers dry-mouthed.

Although the format of the new flying safety magazine didn't exactly set the world on its ear at first, there was one feature in it that did. Our friend. Old Paunchus Pilot.

"I fail to see," said an irate congressman (whom we had sent a copy by mistake) "how we can possibly justify, in this age of post-Korean austerity, a periodical published by the Government Printing Office that extolls the virtues of a martini-swilling, girl-chasing, completely irresponsible United States Air Force pilot — and printed at government expense." He went on to say, among other things, "What in God's name is the Military Air Transport Service and the GPO using for brains?"

Needless to say, the fit hit the Shan. When this hot potato flew into MATS Headquarters, it was

almost unanimously decreed that the conceiver of C.R. Terror should be the one to field it. There was one dissenting vote — me.

However, as always, there are a few men who do not tremble when the hill shakes. There were a few grim-faced but steadfast men in my corner. Lt. Col. Barney Peters, then Chief of the Office of Information Services — at that time responsible for publication of the "MATS Flyer;" Col. Bob David, Chief of Office of Flying Safety; and Capt. Elmer Altnow, who was then editor of the wipe. We bit the bullet and decided to try and justify our Addled Aviator.

I prepared the first draft of the rebuttal that, in all humility, should certainly go down in history with the Boy Scout oath and the Dead Sea Scrolls. I first justified the "MATS Flyer" by pointing out that if the magazine could help instill pride and professionalism in our MATS crewmembers; could preclude even one C-54 from landing with the gear up; or even one SA-16 from making a water landing with the gear down; it more than paid for itself for a long, long time. Furthermore, if our Major Terror could add a little yeast to a heavy loaf; and in the process point up in a readable style the pitfalls and pratfalls of **non**professionalism — we did, indeed, have something going for us.

The first draft was massaged by the group. Barney Peters corrected my grammar, Bob David took out the four-letter words, and Elmer Altnow corrected the spelling. As I recall it was signed by Lt. Gen. Joe Smith — no coward, he — and dispatched to the congressman.

I'm not sure whether our rebuttal did the trick, or whether the congressman's tenure on the hill was terminated by the Vox Populi. In any event, the matter was closed. I continued to be the thirsty throttle-banger for several years, and during that time I recall no further acrimonious volleys levelled at our hero. I'm sure, however, that the succession of editors since that day have had their hands full justifying not only our flatulent flyboy, but this very important publication itself.

During the ensuing years C.R. Terror has gone through more ghost writers than Archie Bunker. And, it's ego-sapping to report (having spot-checked them from time to time) in many cases they have been superior to the original.

However, as the creator, I found writing the adventures of our friend was a rewarding assignment. And it was not without its moments. I received many verbal jabs — and an occasional physical one — from guilt-ridden throttle-benders who were absolutely **convinced** I had fashioned the character after them. But even a threatened lawsuit or two was more than compensated by the fan mail.

The letters generally consisted of either an insult or an accolade — but many were accompanied by a martini recipe. The oddest, as I recall, coming from a navi-

gator who recommended drying the ice cubes with a towel before putting them in the mixer — as being the only way to make a really dry martini. I plan to someday do a book on martini recipes.

Our Airways Airedale has been the subject of flying safety posters, parades and promotional pieces. He has been the theme of parties; has become a byword in the flying fraternity — both civilian and military. He has been considered by hardcover book publishers as a subject for an aviation book. He was the hero of a screenplay written for a flying safety training film that, alas, became the victim of one of our many austerity programs.

As the years flew by I found, like Frankenstein's monster, my creation kept coming back to haunt me. It was easy to leave C.R. Terror when I wrote my last article. But, for some reason, he refused to leave me. He kept cropping up in my novels. Any of you who are unfortunate enough to have read "Penelope," "Adam M-1," "Pandemonium on the Potomac," "The Gooney Bird," "The Apoplectic Palm Tree," or my latest — "Penelope, the Damp Detective" will recognize our sidewinding swashbuckler. He lives in my books as Cornelius Catastrophe Callaghan. But even though the name has been changed to protect the guilty, Callaghan is our lovable, venerable old raconteur of the relief tube — C.R. Terror.

It was very heart-warming to recently read that our ingratiating old bird dog is still the most popular feature in the "MAC Flyer." In retrospect, it would be hard to judge if our star-crossed lover were actually responsible for saving any crewmembers or preserving any military hardware. But if old C.R. has made at least a small contribution toward the attitudes of professionalism and pride that have made our MAC crewmembers second to none throughout the whole world — it has all been worth the candle.

To me, he's not a fictional character, or an article, or a feature in a magazine. He's an old friend. Every bit as bone-and-blood human as any chief pilot, crew chief, or loadmaster. He's a little weird, a lot eccentric, and at times very frustrating. But he's my old buddy.

Fact is, he just blew into town. Was heading for Travis, but due to a slight problem (it's hard to navigate anymore with a sun dial) he ended up in San Diego. He's happily ensconced in the No-Tell Motel, where they just happen to be holding the annual convention of the Sneaker Streakers (an organization of airline stewardesses who streak in tennis shoes.)

He wants me to join him and gargle a martini or two, run a few furlongs with the Sneaker Streakers, then mayhap break a breadstick and ruminate about the old days when we both served in the Military Air Transport Service.

And, in honor of our Twentieth Anniversary, if I can find a jumper cable for my pacemaker, I just might join him.

Quick Stoppers

Lightning Strike—But No CB's!

Lightning struck a SAC B-52 taking off from a California base, causing substantial damage to the radome, wing tips, vertical stabilizer, and antennae. So, what's so unusual about that? Just that there were no thunderstorms anywhere near the B-52.

Before takeoff, weather forecasters briefed the crew to expect a 4,000 foot overcast, visibility of three miles, and rainshowers. During climbout, both navigators closely monitored their radar scopes for unusual weather activity. The scopes showed nothing. Seven minutes after takeoff, the bird was zapped and the crew reported the lightning strike to a nearby Metro. Neither this Metro nor any other in the area were reporting thunderstorm activity. Another crew that departed a few minutes earlier had reported no significant weather activity.

Investigators concluded that the lightning strike was not the result of a thunderstorm but probably was caused by the difference in electrical potential generated by rainshowers.

Aloof Altimeter

Descending through 15,000 feet, a T-39 pilot checked his AAU-19 AIMS altimeter against that of the copilot and confirmed that the difference in altimeter indications was about 200 feet.

The copilot was anticipating the penetration turn at 12,000 feet. When the pilot descended through 12,000 feet without having initiated the turn, the copilot asked his intentions. The pilot said that his altimeter indicated 12,600 feet. Recognizing the discrepancy, the pilot switched from the reset mode to the standby mode. His altimeter reading then matched that of the copilot.

Leveling at an indicated 7,000 feet, the pilot switched back to the reset mode and the altimeter reading changed to 2,000 feet. Switching back to standby, the altimeter again functioned normally and the pilot completed the approach.

Subsequent trouble-shooting revealed a malfunctioning air data computer and failure in the automatic changeover standby circuitry.

The obvious moral here is for copilots to do just what this one did — question any discrepancy between what has been briefed and what is actually being performed by the pilot.

Rudder Pedal or Brake?

During a C-131 pilot proficiency check, the flight examiner retarded the throttle on number one engine to simulate engine failure. The pilot accomplished all emergency procedures and flew a single engine pattern to touchdown. But a loud "pop" sounded as the pilot reversed number two. As the aircraft slowed down on the runway, the pilots felt a vibration and suspected a blown tire. Their suspicions were confirmed. Both left main tires blew out during a smooth landing. But why? Runway skid marks indicated that both left brakes were locked at touchdown, yet investigators found no malfunction in the brake or hydraulic systems.

Further investigation centered on the possibility of inadvertent brake application as the pilot depressed left rudder to counteract yaw during the flare.

The moral here is: "heels on the floor" before and during touchdown.

Minimum power, Maximum Ice

"May Day, May Day!" A light twin-engine plane in the weather lost an engine, was icing up, and could not maintain its 700-foot altitude. An Air Force approach control answered the pilot's May Day and provided the stricken aircraft with radar vectors to a precision approach. But the staggering plane couldn't make it and crash landed along a highway about one-half mile from the base. The pilot escaped without injury, but the aircraft was damaged.

Precautions for light plane flying are sometimes overlooked, especially when these light plane pilots forget the limitations of their aircraft. An aeroclub flier may get the temptation to blast off into the winter skies after he sees the huge airlifters disappear into murky weather. But while large aircraft are equipped to operate in poor weather, not many light planes are equipped to follow suit; so, if you don't have good weather, it might be well to postpone your flight until another day.

Out of Sight, Out of Mind

Preflight has been completed 30 minutes ahead of schedule, fleet service hasn't arrived yet, and the aircraft is still short three pallets. What's the most logical thing to do? You bet — get a cup of java, go out and relax on the ramp, and shoot the bull.

One MAC crew did that one night at an island base when, without warning, a tow tractor charged toward them. The tractor headlights alerted the crew, allowing nearly all of them to scatter. The driver tried to avoid the men but the tractor struck one of them.

Although the airman sustained only superficial injuries, this incident illustrates the necessity for staying alert when you're on the ramps and flightlines. "See-and-be-seen" can be just as important on the ground as it is in the air.

QS

Right Up, Left Down and So On

A left aileron push-pull rod was disconnected during fuel cell maintenance on a C-130. No disconnect entry was made in the 781A, and after fuel cell maintenance was completed, the aileron push-pull rod was not reconnected. During several subsequent ground checks, the left aileron appeared to be working properly due to the tight fit of the push-pull rod at the point of contact with the aileron actuator. During a subsequent control check, the push-pull rod separated and a sharp eyed scanner discovered the disconnected aileron before flight.

Preflights can be monotonous and sometimes downright bothersome, but discovering a hazardous discrepancy, such as this one, certainly prolongs crew life expectancy.

Brakes Set?

During a ground run, the C-141 strained as maintenance personnel in the cockpit pushed the throttles forward. The nose wheel appeared to bounce as power neared TRT, and suddenly the plane jumped the chocks. The brake operator quickly locked the brakes by depressing the pedals and the aircraft skidded to a stop in 20 feet.

Both engine-run NCO's felt the brakes were set prior to engine start, but the aircraft moved forward anyway. Only through quick reaction was a ground accident averted.

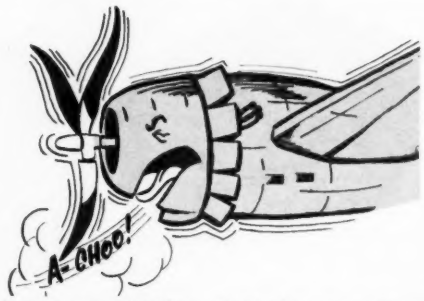
Still A Hazard

As the C-141 taxied out for takeoff at the fighter base, the pilots spotted a maintenance trailer on the edge of the taxiway. A quick look at the wingtips was enough to convince them that the big Starlifter could not taxi on the taxiway centerline and clear the obstacle.

The scanner deplaned and acted as a wingwalker, and the pilot taxied on the opposite edge of the taxiway. Had the plane stayed on centerline, the wing would have hit the trailer.

Cautious taxiing is the rule at MAC bases — where the taxiways are designed and maintained for the heavies — but crews must be even more alert at bases designed for smaller aircraft.

Backfire Woes



Improper starting techniques and rapid throttle movements may be reducing the life span of R-2800 engines powering T-29's, C-131's, and C-118's. Operator abuse sometimes causes backfiring, often damaging engines and causing engine failure.

An engine backfire can force an engine valve open beyond its normal travel, allowing the pushrod to drop out of its rocker arm or tappet socket and become cocked. During the next intake and exhaust stroke, the cocked pushrod causes the valve to open beyond its normal operating travel. This excess travel compresses the valve springs and completely extends the valves. Further valve pressure increase stresses on the valve mechanism until the valve fails. It doesn't take much imagination to figure out the consequences of an ingested valve.

Aircrews can help prevent engine backfires by adhering to Dash One procedures when starting these trusty, old R-2800's and by applying smooth throttle control during flight.

after deadline . . .

GEAR-UP LANDING -- WELL, ALMOST -- You might think it can't happen on a modern aircraft equipped with a variety of gear warning horns and lights -- but pilot preoccupation with cockpit instruction nearly cost Uncle Sam a bunch of bucks recently. A military twin-engine turboprop, on a local training flight, intercepted the glide path on a coupled ILS approach. Descending slowly to decision height, the instructor directed his attention to explaining the function of the coupled ILS status display lights to the pilot in the left seat. The approach seemed to be going well until the pilot started to flare. Suddenly, both pilots realized that the aircraft was settling to the runway with the gear still resting in the wells. The pilots crammed the throttles forward and started a go-around. While the turboprops clawed for precious altitude, the aircraft continued settling. Both pilots heard scraping sounds as the number one prop took a few brief swipes at the runway. The aircraft accelerated, climbed out, and returned to home station. Damage to the aircraft was light -- chewed-up prop tips and a dinged radio antenna. Investigators found that pilot preoccupation led to the omission of the before-landing checklist. The incident is still under investigation.

NEXT MONTH -- Feature articles next month include:

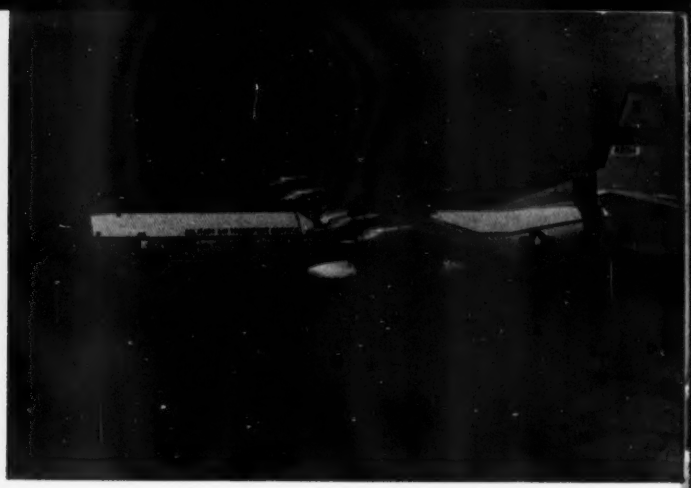
* Winners of the 1974 MAC Flying Safety Writing Contest will be included and the winning story will lead off the July issue.

* Honeycomb -- for you and the Bees -- A look at light weight aircraft paneling common to most of the newer aircraft and the why of "no step" caution decals.

* Burst Your Bubble -- Rapid or explosive decompression still occurs. Read about three recent occurrences experienced by crews flying at high altitude.

* Sling Wing Things -- Can't forget you helicopter drivers. This article covers some basic goodies about the main rotor system.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1974-768-129/10.



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